ABSTRACT

Process for producing a tool insert for injection molding a part which is produced from a synthetic material, a metal or a ceramic material and which comprises an arrangement of microstructures which are formed on an outer surface of the part and have a predetermined depth. The process comprises the following steps:

photo-lithographically masking the front side of a first wafer with a first etching mask which corresponds to an arrangement of microstructures,

microstructuring the first wafer by means of plasma etching the front side of the first wafer to form an arrangement of microstructures, the depth of which extends over the entire thickness of the first wafer, so that the microstructures form cavities which have an orifice on the front side and on the rear side of the first wafer respectively,

removing the first etching mask from the front side of the first wafer,

bonding the front side of the first wafer to a carrier substrate to form a master,

electrochemically depositing a metal layer on the rear side of the first wafer and in the cavities which are present therein and are formed by the microstructures, and

separating the metal layer from the master, wherein the separated metal layer can be used as a tool insert for injection molding a part.